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PATENT
LBNL# IB-1504B

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application)
)
Inventor(s): Bernard Santarsiero, et al.)
)
Application No.: 10/026,362)
)
Filed: December 21, 2001)
)
Title: METHOD FOR SCREENING)
MICROCRYSTALLIZATIONS)
FOR CRYSTAL FORMATION)

Art Unit: 1754

Examiner: _____

Mail Stop IDS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING

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Howard M. Peters (Reg. No. 29,202)

TRANSMITTAL LETTER

Sir:

Enclosed herewith are the following documents:

1. Transmittal Letter in Duplicate (2 pgs);
2. IDS Transmittal – Time of Transmittal (3 pgs);
3. USPTO 1449 Forms (8 pgs);
4. IDS – Transmittal Statements (4 pgs);
5. Volumes 1, 2, 3, A and B of references (U.S. patents and publications in volumes 1 and 2 are submitted herein hard copy and electronically in subsequent applications; and
6. Postcard.

2960.54-3
Syrrx UC-5001-C2

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PATENT
LBNL# IB-1504B

If fees are required for the filing of these documents, the Assistant Commissioner of Patents is hereby authorized to charge or credit any overpayment to Deposit Account No. 16-1331.

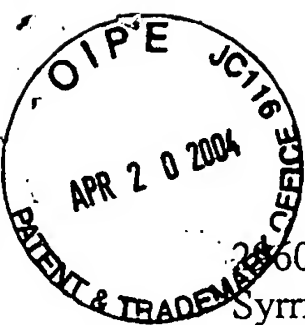
Respectfully submitted,

Date: April 16, 2003



Howard M. Peters (Reg. No. 29,202)
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Attorney Docket No. 2960.54-3

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Syrrx No.: UC-5001-C2

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TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT
WITHIN THREE MONTHS OF FILING OR
BEFORE MAILING OF FIRST OFFICE ACTION (37 C.F.R. § 1.97(b))
AND/OR
AFTER FILING AFTER MAILING OF OFFICE ACTION (37 C.F.R. § 1.97(c))

Sir:

STATEMENTS

Applicants submit herewith patents, publications or other information, of which they are aware that they believe may be material to the examination of this application, and in respect of which, there may be a duty to disclose.

Applicants submits this entire IDS for the hard copy U.S. Patents and U.S. Patent Publications. The hard copy patents, patent publications, literature publications, etc. are submitted concurrently in Vols. 1, 2 & 3 and Vols. A and B.

The filing of this information disclosure statement (IDS) shall not be construed as a representation that a search has been made (37 C.F.R. § 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability (37 C.F.R. § 1.97(h)), or that no other material information exists.

There should be only one filing fee for filing the IDS found in Volumes 1, 2, 3, A and B.

The filing of this information disclosure statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

IDENTIFICATION OF PERSON(S) MAKING
THIS INFORMATION DISCLOSURE STATEMENT

The person making this statement is (check each applicable item)

- (a) ☐ the inventor(s) who signs below

SIGNATURE OF INVENTOR

- (b) ☒ an individual associated with the filing and prosecution of this application (37 C.F.R. § 1.56(c))



SIGNATURE OF INDIVIDUAL

- (c) ☐ the practitioner who signs below on the basis of the information:
(check each applicable item)
- ☐ supplied by the inventor(s).
 - ☐ supplied by an individual associated with the filing and prosecution of this application. (37 C.F.R. § 1.56(c)).
 - ☐ in the practitioner's file.

2960.54-3
Syrrx No.: UC-5001-C2

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PATENT
LBNL No.: IB-1504B

David Weitz, Esq. (Reg. No.: 38,362) who filed this U.S. patent application provided the PTO-1449 form & the references for submission.

The patents and patent publication in hard copy are found in this U.S. Ser. No. 10/026,362. A sheet indicating the other copending patent applications is attached.


It is planned that this IDS will be filed shortly in all these US patent applications.

Also see references in parent USSN 09/336,134 and USSN 09/851,397.

If additional fees are required for the filing of these documents, the Commissioner of hereby authorized to charge or credit an overpayment to Deposit Account No. 16-1331.

Respectfully submitted,

Date: April 16, 2004


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Enclosures: PTO 1449 Forms and References
Volumes 1, 2, 3, A and B
Sheet of related copending US patent applications

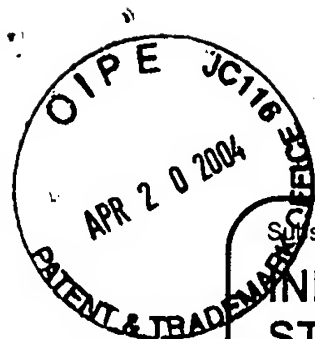
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2960.54 Series - Lawrence National Berkeley Laboratory

PVJS No. (2960.54)	Serial Number	Filed mo/day/yr	LBNL No. (IB- 1504)	Syrrx No. (UC- 5001__)
0.54	General	~	~	U
.54-1	09/336,134	06/18/99	~	U
.54-2	09/851,397	05/07/01	A	C1
.54-3	10/026,362	12/21/01	B	C2
.54-4	10/119,237	04/08/02	C	C5
.54-5	10/119,332	04/08/02	D	C6
.54-6	10/119,187	04/08/02	E	C3
.54-7	10/119,206	04/08/02	F	C4
.54-8	10/323,037	12/18/02	G	C7
.54-9	10/323,319	12/18/02	H	C8
.54-10	10/323,378	12/18/02	I	C9
.54-11	10/322,952	12/18/02	J	C10
.54-12	10/323,949	12/18/02	K	C11
.54-13	10/323,054	12/18/02	L	C12
.54-14	10/324,022	12/18/02	M	C13
.54-15	10/334,336	12/31/02	N	C14
.54-16	10/334,396	12/31/02	O	C15

ISSUED

ISSUED



Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 8

Complete if Known

Application Number	10/026,362
Filing Date	December 21, 2001
First Named Inventor	Bernard Santarsiero et al.
Group Art Unit	1754
Examiner Name	Maribel Medina
Attorney Docket Number	2960.54-3

U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. ¹	Document Number	Publication Date/ Issue Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
	AA	US- 4,900,147	02-13-1990	Bowley et al.	
	AB	US- 4,909,933	03-20-1990	Carter et al.	
	AC	US- 5,009,861	04-23-1991	Plass-Link	
	AD	US- 5,013,531	05-07-1991	Snyder et al.	
	AE	US- 5,076,698	12-31-1991	Smith et al.	
	AF	US- 5,106,592	04-21-1992	Stapelmann et al.	
	AG	US- 5,124,935	06-23-1992	Wallner et al.	
	AH	US- 5,193,685	03-16-1993	Trevithick	
	AI	US- 5,256,241	10-26-1993	Noever	
	AJ	US- 5,544,254	08-06-1996	Hartley et al.	
	AK	US- 5,581,476	12-03-1996	Osslund	
	AL	US- 5,790,421	08-04-1998	Osslund	
	AM	US- 5,855,753	01-05-1999	Trau et al.	
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	AT	US- 2001/0016191A1	08-23-2001	Osslund	
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	AY	US- 6,303,322B1	10-16-2001	Pantoliano et al.	
	AZ	US- 2001/0032582A1	10-25-2001	DeTitta et al.	
	BA	US- 2001/0055669A1	12-27-2001	Schultz et al.	
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	BC	US- 2002/0022250A1	02-21-2002	Hendrickson et al.	
	BD	US- 2002/0048610A1	04-25-2002	Cima et al.	
	BE	US- 2002/0054663A1	05-09-2002	Olson et al.	
	BF	US- 2002/0062783A1	05-30-2002	Bray	
	BG	US- 2002/0067800A1	06-06-2002	Newman et al.	
	BH	US- 6,404,849B1	06-11-2002	Olson et al.	
	BI	US- 6,417,007B1	07-09-2002	Gittleman et al.	
	BJ	US- 2002/0106318A1	08-08-2002	DeLucas et al.	
	BK	US- 2002/0144738A1	10-10-2002	Unger et al.	
	BL	US- 2002/0164812A1	11-07-2002	DeLucas	

Examiner
SignatureDate
Considered

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.

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PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	10/026,362
				Filing Date	December 21, 2001
				First Named Inventor	Bernard Santarsiero et al.
				Group Art Unit	1754
				Examiner Name	Maribel Medina
Sheet	2	of	8	Attorney Docket Number	2960.54-3

	BM	US- 2002/0169512A1	11-14-2002	Stewart	
	BN	US- 2003/0022383A1	01-30-2003	DeLucas	
	BO	US- 2003/0022384A1	01-30-2003	DeLucas	
	BP	US- 2003/0027348A1	02-06-2003	DeLucas et al.	
	BQ	US- 2003/0027997A1	02-06-2003	Bray et al.	
	BR	US- 6,558,623B1	05-06-2003	Ganz et al.	
	BS	US- 2003/0096421A1	05-22-2003	DeLucas et al.	
	BT	US- 6,579,358B2	06-17-2003	DeLucas et al.	
	BU	US- 6,592,824B2	07-15-2003	DeLucas et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ - Number ⁴ - Kind Code ⁵ (if known)				
	BV	WO 99/04361 A1	01-28-1999	Gester et al.		
	BW	JP02001013054A (Abstract only)	01-19-2001	Soda et al.		
	BX	WO 01/26797 A2 and A3	4-19-2003	Eickhoff et al.		
	BY	WO 01/92293 A2	12-06-2001	Kuil et al.		
	BZ	WO 02/093139 A2	11-21-2002	Stewart		

Examiner Signature		Date Considered	
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				First Named Inventor	Bernard Santarsiero et al.
				Group Art Unit	1754
				Examiner Name	Maribel Medina
Sheet	3	of	8	Attorney Docket Number	2960.54-3

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		US-			

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		Country Code ³ - Number ⁴ - Kind Code ⁵ (if known)				

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	AAA	ABOLA, ENRIQUE et al., "Automation of X-ray crystallography", Nature Structural Biology, Structural Genomics Supplement, (11/2000), pp. 973-977.	
	AAB	Presentation: "PBD/Research/Research Areas/ AUTOMATION" (2/28/02), http://www.lbl.gov/LBL-Programs/pbd/xl_research/automation.html 4 pages.	
	AAC	CHAYEN, NAOMI E., "Tackling the bottleneck of protein crystallization in the post-genomic era", TRENDS in Biotechnology, Vol. 20, No. 3 (3/2002), 1 page.	
	AAD	CHAYEN, NAOMI E., "The role of oil in macromolecular crystallization", Structure, Vol. 5, No. 10 (1997), pp. 1269-1274.	
	AAE	CHAYEN, NAOMI E. et al., "Apocrustacyanin A1 from the lobster carotenoprotein α -crustacyanin: crystallization and initial X-ray analysis involving softer X-rays, Acta Cryst. D56 (2000), pp. 1064-1066.	
	AAF	CHAYEN, N.E. et al., "Porous Silicon: an Effective Nucleation-inducing Material for Protein Crystallization", J. Mol. Biol., Academic Press, 312 (2001), pp. 591-595.	
	AAG	CHAYEN, NAOMI E. et al., "Protein crystallization for genomics: towards high-throughput optimization techniques", Acta Cryst. D58 (2002), pp. 921-927.	
	AAH	CHAYEN, N.E. et al., "Trends and Challenges in Experimental Macromolecular Crystallography", Quarterly Review of Biophysics, 29, 3 (1996), pp. 227-278.	
	AAI	CHAYEN, NAOMI E. et al., "Purification, crystallization and initial X-ray analysis of the C ₁ subunit of the astaxanthin protein, V ₆₀₀ , of the chondrophore <i>Veella veella</i> ", Acta Cryst. D55, (1999), pp. 266-268.	

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				Examiner Name	Maribel Medina
Sheet 4 of 8	Attorney Docket Number	2960.54-3			

AAJ	CHAYEN, NAOMI E. et al., "Space-grown crystals may prove their worth", Nature 398, 20 (1999), p. 6722.
AAK	CIANCI, M. et al., "Structure of lobster apocrustacyanin A ₁ using softer X-rays", Acta Cryst. D57 (2001), pp. 1219-1229.
AAL	Press Release: "Crystallomics Core", Crystallomics Core at JCSG, http://bioinfo-core.icsg.org/bic/links/crystallomics.htm (4/18/01), 2 pages.
AAM	DELUCAS, LAWRENCE J. et al., "New High-throughput Crystallization Technology", http://www.hwi.buffalo.edu/ACA/ACA02/abstracts/text/E0014.html (2002), 1 page.
AAN	DONG, JUN et al., "Bound-solvent structures for microgravity-, ground control-, gel- and microbatch-grown hen egg-white lysozyme crystals at 1.8 Å resolution", Acta Cryst., D55 (1999), pp. 745-752.
AAO	DOUGLAS INSTRUMENTS Proposal: Large-scale Xn "The use of Microbatch for Large Scale Crystallization Projects", http://douglas.co.uk/proposal.htm (2/22/01), 6 pages.
AAP	DOUGLAS INSTRUMENTS Website: "Differences – The Major Differences between Oryx 6 and IMPAX 1-5 (3/2001), 1 page.
AAQ	DOUGLAS INSTRUMENTS Website: "Harvesting – Harvesting Crystals from Microbatch for Cryocrystallography", Research Report 3 (October 1995), 4 pages.
AAR	DOUGLAS INSTRUMENTS, "Impax – IMPAX 1-5 for Crystallization with Microbatch, www.douglas.co.uk/impax.htm (printed on 2/19/04), 8 pages.
AAS	DOUGLAS INSTRUMENTS Website: "Oryx 6 for Crystallization with Microbatch and Sitting Drop", http://douglas.co.uk/oryx.htm (printed on 2/19/04), 7 pages.
AAT	EICKHOFF, HOLGER et al. Webpage: "An Automated Platform for Miniaturized Protein Crystallization" (2002), Greiner Bio-One (Abstract), 1 page.
AAU	ERLANDSEN, HEIDI et al. "Combining structural genomics and enzymology: completing the picture in metabolic pathways and enzyme active sites"(2000), Current Opinion Structural Biology, 10, pp. 719-730.
AAV	FIEHN, HENDRIK et al., "Microsystem Technology for Pipetting Systems: Parallel Sample Treatment in the Submicroliter Range (25)", Small Talk the microfluidics and microarrays Conference Final Conference Program, Association for Laboratory Automation, (7/8-12/2000), San Diego, California (Abstract), 2 pages.
AAW	GAASTERLAND, TERRY, "Feasibility of Structural Genomics and Impact on Computational Biology: Post-Workshop Review", Mathematics and Computer Science Division, Argonne National Laboratory (1/26/1998), 7 pages.
AAX	Website: "General Interest II – Invited Abstracts", printed from http://www.hwi.buffalo.edu/ACA/ACA01/abstracts (7/26/01), 2 pages.
AAZ	GOODWILL, KENNETH E., et al., "High-throughput x-ray crystallography for structure-based drug design", DDT Vol. 6, No. 15 (Suppl.) (2001), pp. S113-S118.

Examiner Signature		Date Considered	
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				Group Art Unit	1754
				Examiner Name	Maribel Medina
Sheet	5	of	8	Attorney Docket Number	2960.54-3

	AAZ	Website: "A recipe to grow crystals of lysozyme by the gel acupuncture technique: Granada Crystallization Box", http://lec.ugr.es/GranadaCrystBox/GCB (4/11/02), 7 pages.	
	ABA	HEINEMANN, UDO et al., "The Berlin "Protein Structure Factory" Initiative", Scientific Concepts, http://www.rzpd.de/psf/s_concept2.html (12/21/01), 16 pages.	
	ABB	Press Release: "High-throughput protein crystallization screening and polymorph screening", (Abstract) http://www.steinbeis-europa.de/db/ircnet_details.php?BEREICH=LIFE&TYP=Offer&BB (5/7/01), 2 pages.	
	ABC	HOSFIELD, DAVID et al., "A fully integrated protein crystallization platform for small-molecule drug discovery" (2003), Journal of Structural Biology, 142, pp. 207-217.	
	ABD	JING, HUA et al., "New structural motifs on the chymotrypsin fold and their potential roles in complement factor B", Euro. Mol. Bio. Org., Vol. 19, No. 2 (2000), pp. 164-173.	
	ABE	JING, HUA et al., "Structures of Native and Complexed Complement Factor D: Implications of the Atypical His57 Conformation and Self-inhibitory Loop in the Regulation of Specific Serine Protease Activity", J. Mol. Biol. 282 (1998), pp. 1061-1081.	
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	ABG	Press Release: "Joint Center For Structural Genomics Funded to Advance High-Throughput Protein Structure Determination", http://www.sdsc.edu/Press/00/092600.html (9/25/00), 3 pages.	
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Filing Date	December 21, 2001
First Named Inventor	Bernard Santarsiero et al.
Group Art Unit	1754
Examiner Name	Maribel Medina
Attorney Docket Number	2960.54-3

ABP	LUFT, JOSEPH R. et al., "High Throughput Protein Crystallization: Keeping up with the Genomics", Abstract from the presentation given at Gordon Research Conference "Diffraction Methods in Molecular Biology", http://www.imca.aps.anl.gov/~ahoward/luft_ab.html (7/2000), 1 page.
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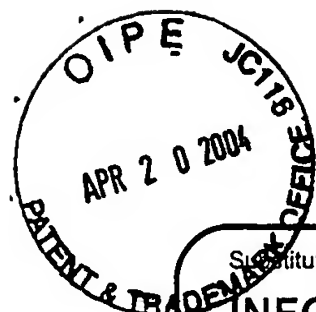
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First Named Inventor	Bernard Santarsiero et al.
Group Art Unit	1754
Examiner Name	Maribel Medina
Attorney Docket Number	2960.54-3

Sheet	7	of	8
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ACF	SARIDAKIS, EMMANUEL et al., "Improving protein crystal quality by decoupling nucleation and growth in vapor diffusion", Protein Sci. 9, (2000), pp. 755-757.
ACG	SCHUETZ, ANDREAS J. et al., "A Novel nano-pipetting system for the development of high quality BioChip arrays", http://www.tecan.com/la2000_nanopip.pdf (2000), 1 page.
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ACK	SNELL, E.H. et al., "Partial Improvement of Crystal Quality for Microgravity-Grown Apocrustacyanin C ₁ ", Acta. Cryst., D53 (1997), pp. 231-239.
ACL	STEVENS, RAYMOND C. et al., "Global Efforts in Structural Genomics", Science (10/5/01), 294, pp. 89-92.
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ACP	STEVENS, RAYMOND C., "The cost and value of three-dimensional protein structure"(2003), Drug Discovery World, 4, pp.35 – 48.
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ACR	STEVENSON, ROBERT, "The World of Separation Science – Lab Automation '01: A Market Preparing For Transition?" (2001), 2 pages.
ACS	S7-Instrumentation – Instrumentation and techniques for crystallization (Oral Presentation), Nancy 2000 XIX European Crystallographic Meeting August 25 - 31, 2000, pp.1–3.
ACT	Press Release: "The Robot- X-ray Crystallography in Leiden", http://www.chem.Leidemuniv.nl/bfsc/robot.html (3/2/2002), 2 pages.
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	ACV	TISONE, T.C. et al., "The Role of Non Contact Microfluidics in High Throughput Protein Crystallization", (Abstract W0282 from ACA 2002 Meeting) http://www.hwi.buffalo.edu/ACA/ACA02/abstracts/text/W0282.html , 1 page.	
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	ACY	Presentation: VAN DER WOERD, MARK J. et al., "Lab-on-a-Chip Based Protein Crystallization" (10/25/01), 27 pages.	
	ACZ	VILLASENOR, ARMANDO et al., "Fast Drops: A Speedy Approach to Setting Up Protein Crystallization Trials" (Abstract W0309 from ACA 2001 Meeting) http://www.hwi.buffalo.edu/ACA/ACA01/abstracts/text/W0309.html , 1 page.	
	ADA	WESELAK, M. et al., "Robotics for Automated Crystal Formation and Analysis"(2003), Methods in Enzymology, 368, pp.45 -76.	
	ADB	Presentation: "Working Group on Biosciences" Chair: Graham Fleming, University of California, Berkeley, http://www.-als.lbl.gov/als/workshops/scidirecthtml/9BioSci/Word Work File L 646 (1998), pp. 175-198.	

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